

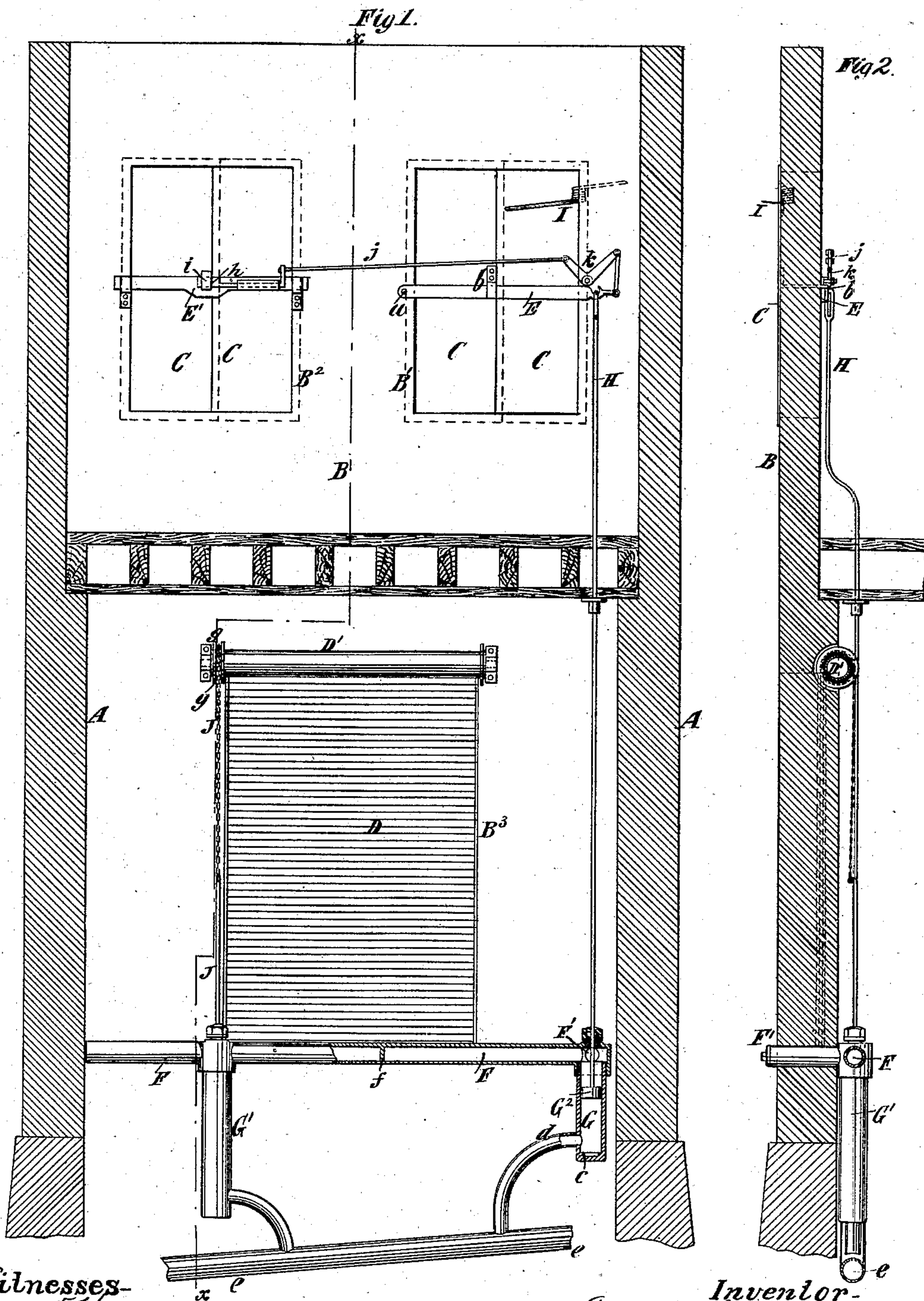
(Model.)

J. C. HORTON.

MEANS FOR UNLOCKING AND OPENING SHUTTERS.

No. 258,066.

Patented May 16, 1882.



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UNITED STATES PATENT OFFICE.

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MEANS FOR UNLOCKING AND OPENING SHUTTERS.

SPECIFICATION forming part of Letters Patent No. 258,066, dated May 16, 1882.

Application filed February 9, 1882. (Model.)

To all whom it may concern:

Be it known that I, JACOB C. HORTON, of the city and county of New York, in the State of New York, have invented certain new and useful Improvements in Means for Unlocking and Opening Shutters, Blinds, and Doors in Buildings, of which the following is a specification.

The inner shutters and rolling blinds or doors which are frequently employed to close the windows and doors of warehouses and other buildings, although very effective in preventing fire from entering a building from the outside and in resisting the attempts of burglars, often prove a serious obstacle to the entrance of firemen when a fire is started within the building; and often the fire is so far advanced before the shutters or blinds can be broken down or forced and water delivered upon the fire that the building cannot be saved.

The object of my invention is to enable the firemen to readily open or unlock such shutters, blinds, or doors from the exterior of the building.

The invention consists essentially in the combination, with a shutter, blind, or door of a building, of a hydraulic or fluid motor arranged within the building and connected with said shutter, blind, or door, or the devices which hold it closed, and a nozzle projecting from such motor or its supply-pipe through the wall of the building, or accessible from the exterior thereof, and to which the fireman may attach a hose for delivering water or steam under pressure to the motor.

The invention also consists in the combination, with the above, of springs for throwing open the shutters when they are unlocked by the operation of the motor. The motor may consist of a cylinder and piston, and I provide the cylinder with an outlet, past which the piston travels, and which relieves the piston from pressure after the shutters, blinds, or doors are opened.

In the accompanying drawings, Figure 1 represents a vertical section of a building having my improvements applied thereto and arranged on the interior of one of the walls, and

Fig. 2 represents a vertical section upon the dotted line *xx*, Fig. 1.

Similar letters of reference designate corresponding parts in both figures.

A designates the side walls of a building, of which two stories are shown, and B designates the front wall thereof. In the upper story are represented two window-openings, B' B², and in the lower story is a door-opening, B³. The window-openings B' B² are represented as closed each by a pair of hinged shutters, C, and the door B³ by a rolling blind or shutter, D, such as is commonly made of metal. The shutters which cover the window-opening B' are held closed by a cross-bar, E, hinged at one end, *a*, and which may be swung or moved up or down at its free end to engage it with or disengage it from a hook, *b*, upon the inside of the shutters C.

F designates a pipe extending horizontally across the building, below the door B³, and which may be provided with one or more nozzles, F', projecting through the front wall, B, as shown in Fig. 2, or accessible from the exterior of the wall.

To the pipe F are connected two cylinders, G G', which project downward therefrom, and are provided with pistons G², which are fitted thereto. The piston G² in the cylinder G is connected by a rod, H, with the free end of the bar E, and consequently when the piston is forced down in its cylinder the bar E is disengaged from the hook *b* and the shutters C are released. When thus released they may be opened by the resistance of a spring, I, acting upon them, as shown clearly in Fig. 1. Near the bottom of each cylinder G G' is a shoulder, *c*, and immediately above the shoulder is a waste-pipe, *d*, which communicates with a pipe, *e*, leading to the sewer or other waste-outlet.

The pipe F may be divided at *f* between the cylinders G G', if desired, so that the piston G² in either cylinder may be operated independently of the other.

When the hose of a fire-engine is connected with the nozzle F' the water enters under pressure, and, filling the pipe F or part thereof, acts upon the piston G² of the cylinder G, thereby

forcing down the piston, and through the rod H drawing down the bar E and releasing the shutters C, closing the window-opening B'.

The rolling blind or shutter D is raised by winding it upon a roller, D', and the piston in the cylinder G' is connected by a cord or other connection, J, with a pulley, g, upon the roller D'. Consequently when the piston is forced down the blind D is rolled upon its roller D' and raised.

The shutter C, which closes the window-opening B², is here represented as locked in position by a bolt, h, which is adapted to slide upon a cross-bar, E', and engage with a hasp, i, on one of the shutters.

The bolt h may be drawn longitudinally to release the shutters by a wire or other connection, j, extending from a bell-crank lever, k, which is operated by the downward movement of the rod H.

The pistons G² in the cylinders G G' are made so light that the friction in their cylinders is enough to keep them from falling or moving down and releasing the shutters when not desired, and when the piston is moved down to a sufficient extent it strikes the shoulder c and the water passes out the waste-outlet d, and does not subject the mechanism to any severe strain.

I may, if desired, employ any suitable kind of fluid-motor in lieu of the piston and cylinder, and it is obvious that the pistons or the movable parts of the other motors employed may be connected with the shutters, doors, or blinds by a great variety of devices.

I may arrange pipes F adjacent to each wall of the building in which there are windows, and I may also arrange a similar pipe above each floor for operating all the shutters, blinds, or doors on that floor. It is equally obvious that the several pipes F may all be connected within the building; so that the motors which are supplied from them may all be operated by a single hose applied to a single nozzle, F'; or I may connect all the shutters, doors, or blinds on one side of a building with a single motor.

Instead of connecting the discharge-hose of a fire-engine with the nozzle F', the boiler of the engine may be connected in a similar manner and steam employed instead of water as an agent for operating the motor or motors.

By my invention I provide a means whereby the iron shutters or blinds or doors of a building may be readily opened by firemen on the breaking out of a fire within the building, and this end I attain without at all impairing the effectiveness of the shutters, blinds, or doors as a protection against fire from the outside of the building and against burglars.

I am aware that it is old to employ a system

of levers and other mechanical connections between the securing devices of a shutter and the exterior of a building where they may be operated; but such an arrangement differs from mine, in that any one who can gain access to the operating lever or device can open the shutters, while in my apparatus the shutters can be opened only by the aid of a fire-engine or analogous machine, and their being tampered with by burglars is prevented.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a shutter, blind, or door of a building, of a fluid-motor within the building, connected with said shutter, blind, or door, or its securing device for operating it, and a nozzle projecting from said motor or its supply-pipe and accessible from the exterior of the building for the attachment of a hose, substantially as and for the purpose specified.

2. The combination, with a shutter, blind, or door of a building, of a fluid-motor cylinder arranged within the building, a piston fitting said cylinder and connected with the operating or securing devices of said shutter, blind, or door, and a nozzle accessible from the exterior of the building and communicating with said cylinder, substantially as and for the purpose specified.

3. The combination, with a shutter of a building, of devices for holding it closed, a spring for throwing it open when released, a fluid-motor for operating said securing devices to release the shutter, and a nozzle leading from said motor and accessible from the exterior of the building, substantially as and for the purpose specified.

4. The combination, with the shutter or blind of a building, of a cylinder, G, having a shoulder, c, and a waste-pipe, d, and arranged within the building, a nozzle, F', communicating with the cylinder and accessible from the exterior of the building for the attachment of a hose, a piston, G², and connections between said piston and the operating or securing devices of the shutter, substantially as specified.

5. The combination, with the shutters of a building and their operating or securing devices, of a pipe, F, extending across the interior of a wall of the building, two or more cylinders, G G', connected with said pipe, pistons G², a nozzle or nozzles, F', accessible from the exterior of the building for the attachment of a hose, and connections between said pistons and the operating or securing devices of the shutters, substantially as and for the purpose specified.

JACOB C. HORTON.

Witnesses:

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